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10/725,359	12/01/2003	Carlambrogio Bianchi	60246-306;10766	1318

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EXAMINER

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ART UNIT PAPER NUMBER

3753

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/725,359
Filing Date: December 01, 2003
Appellant(s): BIANCHI ET AL.

MAILED

APR 10 2006

~~Group 3700~~

Karin H. Butchko
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3/20/2006 appealing from the Office action mailed 9/22/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct. Furthermore, it is clear in the record that claims 5, 7-8, 11-12 and 18-19 have been cancelled.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct. The Amendment After Final filed 11/15/2005 was a Request For Reconsideration and there was no change in the claims.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

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(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4,6,9-10,13-17 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin, Sr. (US 5,284,027) in view of Sullivan (US 5,195,332). Martin discloses (figures 2,3,18 and column 6, line 51- column 7, line 30) a ducted heating and cooling unit comprising at least one fan (12); a V-shaped bent coil (120) disposed in the downstream direction from the fan; the bent coil having a coil surface through which outlet air is discharged in a first direction and a second different direction (air exits at side openings 106); a duct (102,130) housing the fan and the bent coil; a separation wall (132) having an opening disposed between the fan and the bent coil for allowing air flowing toward the coil; the duct includes at least one side opening (106) substantially aligned with the second direction (arrow shown air exiting the duct). As regarding claim 2, the direction of air exiting outlet (108) at end of the duct is considered to be a first direction, which is longitudinal and the direction of air exiting outlet (108) at two side of the ducts is considered to be a second direction which is at an angle with respect to the first direction. As regarding the limitation of the vertical fins, Martin discloses (figures 3 and 13) a plurality of fins (104 or 444) formed in the bent coil to direct the outlet air substantially perpendicular to the coil surface and diverting the outlet air into different directions.

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Martin does not disclose that there are two fans blowing the air over the coils. Sullivan discloses (figure 1 and column 3, lines 57-68) a cooling system that has two fans (15) installed in the system for the purpose of increasing the quantity of unconditioned air flowing over a heat exchanger coil (12). Since Martin and Sullivan are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art, at the time the invention was made to use Sullivan's teaching in Martin's device for the purpose of increasing the quantity of unconditioned air flowing over a heat exchanger coil. Regarding claims 13 and 14, applicant has not disclosed that having the coil in C-shaped would solve any stated problem or is for any particular purpose that the V-shaped coil would have not. Moreover, it appears that the coil would perform equally well with either the shape of coil is C or V shape (page 3, paragraph 13, in the specification). Accordingly, the shape of the coils is deemed to be a design consideration, which fails to patentably distinguish over the prior art of Martin.

Claims 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Sullivan as applied to claims 1 and 6 above, and further in view of Ikeya (US 5,482,115) or Nagakura (US 5,174,366). Martin and Sullivan substantially disclose all of applicant's claimed invention as discussed above except of the limitation that the coil includes a plurality of tubes that are aligned vertically and staggered horizontally. Both Ikeya (figure 1) and Nagakura (figures 1-3) disclose a heat exchanger that has a coil including a plurality of tubes that are aligned vertically and staggered horizontally for the purpose of improving the heat exchanging performing of the heat exchanger. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use either one teaching of Ikeya or Nagakura in the

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combination device of Martin and Sullivan for the purpose of improving the heat exchanging performance of the heat exchanger.

Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Sullivan as applied to claims 1 and 6 above, and further in view of Vandervaart (US 5,189,887). Martin and Sullivan substantially disclose all of applicant's claimed invention as discussed above except for the limitation that the fins are aluminum. Vandervaart discloses (figure 1) a heat exchanger used in a furnace that coil (24,25) attached with fins (27) wherein fins (27) is selected to be aluminum for a purpose of enhancing the heat transfer of the coil and maintaining the low cost of the heat exchanger since aluminum is known in the art to have high heat transfer coefficient and relative low cost when compared to other high heat transfer material. Since Vandevaart and Martin are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Vandevaart's teaching in Martin's device for a purpose of enhancing the heat transfer of the coil and maintaining the low cost of the heat exchanger since aluminum is known in the art to have high heat transfer coefficient and relative low cost when compared to other high heat transfer material.

(10) Response to Argument

A. Obviousness of claims 1-4,6,9,10, 13-17, and 24-25 based on Martin, Sr. in view of Sullivan.

Appellant's arguments in the appeal brief have been fully considered but they are not persuasive. In response to appellant's argument that Martin's device does not appear to be able to contain two fans, the test for obviousness is not whether the features of a secondary reference

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may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, the combined teachings of Martin and Sullivan would have suggested to one of ordinary skill in the art to use more than one fan in the heat exchanger system for a purpose of increasing the amount of air flowing over the coil, which provides greater cooling capacity. In any event, clearly the number of fans can be used in a heat exchanger system does not involve any inventive step since applicant does not disclose any criticality or unexpected result for having two fans. In fact, a heat exchanger system equipped with two fans is well known in the art and can be found in both Appellant's admitted prior art (figure 1) and Sullivan's reference. The number of fans can be used in a heat exchanger system is just a design consideration since it is a common knowledge that two fans can generate more air than one fan. However, the cost of operating two fans is higher than that of one fan. Therefore, the selection of two fans or more over one fan is just a design consideration between cost and cooling capacity. Furthermore, Appellant argues that the secondary reference to Sullivan discloses a non-straight flow path instead of a straight flow path, which will ruin a benefit of Martin, has been very carefully considered but is not deemed to be persuasive because reference to Sullivan was relied on to teach a number of fans (more than one fan) that can be used in a heat exchanger to blow air over the heat exchanging core and not the structure of the system nor structure of the fans.

Regarding claim 2, Appellant's argument that Martin does not disclose outlet air from a coil with a longitudinal first direction and a second direction at an angle with respect to the first

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direction, is not found to be persuasive. The examiner has pointed out in the rejection, particularly to claim 2, that reference to Martin discloses (figure 3) the direction of air exiting outlet (108) at an end of the duct is considered to be a first direction, which is longitudinal and the direction of air exiting outlet (108) at two sides of the ducts is considered to be a second direction, which is at an angle with respect to the first direction.

B. Are claims 20 and 21 properly rejected under 35 U.S.C 103(a) based on Martin, Sr. in view of Sullivan and further in view of Ikeya (US 5,482,115) or Nagakura (US 5,174,366)?

Appellant's argument that claims 20 and 21 are patentable because claims 20 and 21 depend on patentable claims 1 and 6 respectively, is not found to be persuasive because claims 1 and 6 are not patentable. (Please See A)

C. Are claims 22 and 23 properly rejected under 35 U.S.C. 103(a) based on Martin, Sr. in view of Sullivan and further in view of Vandervaart (US 5,189,887)?

Appellant's argument that claims 22 and 23 are patentable because claims 22 and 23 depend on patentable claims 1 and 6 respectively, is not found to be persuasive because claims 1 and 6 are not patentable. (Please See A)

(11) Related Proceeding(s) Appendix

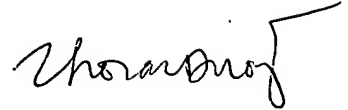
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

Tho Duong



Primary Examiner

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TD

April 5, 2006

Conferees:

Eric Keasel



Terrell McKinnon